UNITED STATES PATENT AND TRADEMARK OFFICE

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10/787,391	02/27/2004	Kazuhiro Mino	Q80124	4819

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ART UNIT	PAPER NUMBER
2624	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/787,391	MINO ET AL.
	Examiner	Art Unit	
	EUENG-NAN YEH	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _07 July 2009_.

2a)☒ This action is FINAL.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-17_ is/are pending in the application.

     4a) Of the above claim(s) _3,8,10 and 13_ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,2,4-7,9,11,12,14-17_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a)☐ All   b)☐ Some * c)☐ None of:

         1.☐ Certified copies of the priority documents have been received.

         2.☐ Certified copies of the priority documents have been received in Application No. _____.

         3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

FINAL ACTION

Response to Amendment

1.   The following Office Action is responsive to the amendment and remarks

received on July 7, 2009. Claim 13 was cancelled and claims 15-17 are added. Claims

1, 2, 4-7, 9, 11, 12, 14 and newly added claims 15-17 remain pending.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described
> as set forth in section 102 of this title, if the differences between the subject matter sought to be
> patented and the prior art are such that the subject matter as a whole would have been obvious
> at the time the invention was made to a person having ordinary skill in the art to which said
> subject matter pertains. Patentability shall not be negatived by the manner in which the
> invention was made.

3.   Claims 1-2, 5-7, 9, 11, 12, and 14-17 are rejected under 35 U.S.C. 103(a) as

being unpatentable over the combination of Mitsui (US 7,222,235 B1), Hsieh et al. (US

7,003,135 B2) and Rhoads (US 6,411,725 B1).

        Regarding claim 1, Mitsui discloses an information attaching/detecting system

comprising:

        - object extracting means, for extracting a plurality of regions, from within the

image (as depicted in figure 15, numeral 106 will perform the object extracting means,

"[t]he image inputting apparatus 101(m) inputs an image and converts the input image

to electronic data. The image inputting apparatus 101(m) may be a scanner or a digital

camera. The image inputting apparatus 101(m) outputs the input image data as an

original image A(m). The image processing apparatus 106(m) has a function of inputting

the original image A(m) from the image inputting apparatus 101(m) and outputting a

processed image C(m). The image processing apparatus 106(m) generates the

processed image C(m) by embedding a digital watermark into the original image A(m)"

at column 22, line 11. The plurality of photographed objects is shown in figure 33, "FIG.

33 shows how the digital watermark is embedded in the form Y … the digital watermark

is shaded for an explanation. For example, different kinds of digital watermarks are

embedded for each of the region S1 and the region S2 because the character size is

different between the region S1 and the region S2 … Furthermore, because the region

S3 is a photograph, the digital watermark, which is different from in the region S1 and

the region S2, is embedded in the region S3" at column 38, line 56. See also figure 32

which indicates a plurality of regions, such as character with REGION 1 and REGION2

and photograph with REGION 3 and REGION n, is valid for object extraction);

- information attaching means for attaching different information to each of the

regions that do not overlap with other regions and acquiring said information-attached

image (as discussed above and shown in figure 15, numeral 106 will perform the

information attaching means. Different information attaches to each not overlap regions

is shown in figure 33, "FIG. 33 shows how the digital watermark is embedded in the

form Y … the digital watermark is shaded for an explanation. For example, different

kinds of digital watermarks are embedded for each of the region S1 and the region S2

because the character size is different between the region S1 and the region S2 …

Furthermore, because the region S3 is a photograph, the digital watermark, which is different from in the region S1 and the region S2, is embedded in the region S3" at column 38, line 56. See also figure 32 which indicates a plurality of regions, such as character with REGION 1 and REGION2 and photograph with REGION 3 and REGION n, is valid for embedding information);

- detection means for detecting said information from received data for each of said plurality regions contained in said information-attached image (as depicted in figure 15, numeral 108 will detect the embedded information received from transmitted information-attached image. Figure 19 shows a block diagram for the information detection. Detailed discussion about the detection processing can be found from column 24, line 22 to column 25, line 8).

Mitsui discloses that regions are used for information attaching/detecting. Mitsui does not explicitly disclose that the regions are human facial regions. Furthermore, Mitsui discloses the detection means from the transmitted information-attached image. Mitsui does not explicitly disclose that the received data can be a photographed-image by photographing an image reproducing medium on which information-attached image is reproduced.

Hsieh, in the field of endeavor of faces tracking ("which is able to effectively detect and track a plurality of faces in real-time" at column 2, line 7), based on the fact that "[i]n order to efficiently separate the face regions from the complex backgrounds, a preferable approach is to use the hybrid information of color and motion. Then, the segmented regions are further verified to determine whether the correct faces are

extracted from the remaining distracters" at column 1, line 42, teaches a methodology to track no-overlap human faces as shown in figure 1, numeral 10 and overlapped faces with: "a face-like region generator having a skin region extractor, a motion analyzer and a silhouette analyzer. The skin region extractor generates a plurality of skin regions by detecting skin color pixels of an input image. The motion analyzer determines possible face-like regions from the skin regions based on moving information of the input image. The silhouette analyzer analyzes whether there exists a raised shape in the image so as to separate connected regions ..." at column 2, line 39. Thus, Hsieh discloses a methodology to detect regions which are human facial regions for real-time tracking.

It would have been obvious at the time the invention was made, that one of ordinary skill in the art would have been motivated to include the information attaching/detecting system Mitsui made with the application of face-like region generator as taught by Hsieh, in order to effectively tracking human faces in real-time as stated above by Hsieh.

The combination of Mitsui and Hsieh does not explicitly disclose that the received data can be a photographed-image by photographing an image reproducing medium on which information-attached image is reproduced.

Rhoads, in the field of endeavor of multimedia signal processing ("in particular relates to encoding information into and decoding information from video objects" at column 1, line 30), teaches a robust data embedding methodology as shown in figure 2, "[i]n FIG. 2, physical objects 200 are pre-watermarked in a manner that survives the video capture process 202. For an example of a watermarking process that survives

digital to analog conversion (e.g., printing a digital image on a physical object), and then analog to digital conversion (e.g., capture via a video camera) … The resulting video is then transmitted or broadcast 204" at column 7, line 29. Thus, the watermark can survive by printing this watermark embedded digital image and then capture this printed image via camera. Without departing from the scope and spirit of Rhoads' methodology, a second image captured by the camera can be an image from printing which created by Mitsui information attached first image.

It would have been obvious at the time the invention was made, that one of ordinary skill in the art would have been motivated to enhance the information attaching/detecting system of the Mitsui and Hsieh combination, with the application of data embedding methodology as taught by Rhoads, so the embedded data can survive various scenarios as discussed above.

Regarding claim 2, information attaching means is means for acquiring said information-attached image by hiddenly embedding said information in said image ("An image processing system can be provided such that the image providing apparatus recognizes a format of an image file, and provides the image file in which the digital watermark is embedded in a part of a region based on the format …" at Mitsui column 5, line 61. See also Rhoads figure 4, numeral 404 "…watermark encoding process 404 encodes the auxiliary information into the content. …" at Rhoads column 8, line 13).

Regarding claim 5, image pick-up means is a camera provided in a portable

terminal (discussed in claim 1, digital camera can be the image pick-up means).

Regarding claim 6, said information is location information representing storage

locations of audio data correlated with said plurality of photographed objects ("Another

aspect of the invention is a method for using a watermark that has been encoded into a

video signal … The watermark may include a direct (e.g., URL or network address) or

indirect link (e.g., object identifier) to the web site …" at Rhoads column 2, line 35),

and which further comprises audio data acquisition means for acquiring said audio data,

based on said location information (as depicted in Rhoads figure 1A, numeral 114: "a

user interface 114 executes and provides visual, audio, or audio-visual information to

the user … user interface receives input from the user, selecting a video object. In

response, it performs an action associated with the selected object using the auxiliary

object information decoded from the watermark …" at Rhoads column 4, line 17. See

also "The watermark may carry information or programmatic action. It may also link to

external information or an action, such as retrieval and output of information stored

elsewhere in a database, website, etc. Watermark linking enables the action associated

with the watermark to be dynamic …" at Rhoads column 4, line 29).

Regarding claim 11, the information device according to claim 1, further

comprising:

- a mobile communication terminal having a camera (as discussed in claim1 and suggested by Rhoads a camera for the mobile communication terminal);

- a server (as depicted in Rhoads figure 8, numeral 802 is a server);

- wherein the camera of the mobile terminal photographs the image reproducing medium (as discussed in claim 1 and suggested by Rhoads a camera of the mobile communication terminal photographs the image reproducing medium);

- wherein the input means and the detecting means are disposed in the server (as depicted in Rhoads figure 8, the server #802 receives input and parses and extracts to detect information: "The server, in response to receiving the message (828), parses it and extracts an index used to look up a corresponding action in a database (830) that associates many such indices to corresponding actions ..." at Rhoads column 14, line 44).

Regarding claim 12: - wherein the information is a location of audio data and the server acquires said audio data using said location and transmits said audio data to said mobile communication terminal (the combination of Mitsui and Rhoads teaches the mobile terminal about the location: "watermark may include a direct (e.g., URL or network address) or indirect link (e.g., object identifier) to the web site ..." at Rhoads column 2, line 44, to get audio data: "user interface 114 *(Rhoads figure 1A)* executes and provides visual, audio, or audio-visual information to the user ... user interface receives input from the user, selecting a video object. In response, it performs an action associated with the selected object ..." at column 4, line 17. Furthermore, "The server,

in response to receiving the message (828) *(Rhoads figure8)*, parses it and extracts an index used to look up a corresponding action in a database (830) that associates many such indices to corresponding actions ..." at Rhoads column 14, line 44).

Regarding claim 14: - a region setting section, for setting block regions corresponding to each photographed object that do not overlap with other regions that include other photographed objects (as discussed in claim 1, the figure 33 of Mitsui contains plurality of not overlapped regions with photographed objects such as S1, S2, S2, and S4);

- an information attaching section, for attaching different information to each of the plurality of block regions which are set by the region setting means (as discussed in claim 1, the information attaching means for, information attached to each region is different).

Regarding claim 15, wherein the plurality of facial regions are extracted by extracting skin-colored regions (as discussed in claim 1 by Hsieh for a skin region extractor).

Regarding claim 16, wherein the plurality of facial regions are extracted by extracting face contours (as discussed in claim 1 by Hsieh for a silhouette analyzer).

Regarding claims 7 and 9: - extracting a plurality of facial regions of humans from within the image (discussed in claim 1, especially, Hsieh teaches the plurality of human facial regions extraction);

- attaching different information to each of the plurality of facial regions in said image that respectively and acquiring said information-attached image (as discussed in claim 1 for information attaching means. See also Mitsui figure 33, "FIG. 33 shows how the digital watermark is embedded in the form Y ... the digital watermark is shaded for an explanation. For example, different kinds of digital watermarks are embedded for each of the region S1 and the region S2 because the character size is different between the region S1 and the region S2 ... Furthermore, because the region S3 is a photograph, the digital watermark, which is different from in the region S1 and the region S2, is embedded in the region S3" at Mitsui column 38, line 56);

- receiving photographed-image data obtained by photographing an image reproducing medium, on which the information-attached image is reproduced, with image pick-up means (as discussed in claim 1, input means for);

- detecting said information from said photographed-image data for each of said plurality of facial regions contained in said information-attached image (as discussed in claim1, detection means for);

- outputting the information corresponding to each of the plurality of facial regions, based on the detected information ("Wherever the video is distributed, a decoding process may be inserted to decode information about the video object from a watermark embedded in the video signal. This information may then be used to trigger

an action, such as fetching graphics and displaying it to the user …" at Rhoads column

4, line 61).

Regarding claim 17, wherein the outputting comprises providing a visual or audio

display via at least one of a audio device and a display monitor (as discussed in claim 7

for outputting detected information "may then be used to trigger an action, such as

fetching graphics and displaying it to the user …" at Rhoads column 4, line 64).

4.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the

combination of Mitsui, Hsieh, and Rhoads as applied to claim 1 discussed above, and

further in view of Motta et al. (US 6,726,103 B1).

        The Mitsui, Hsieh, and Rhoads combination discloses an information

attaching/detecting system with image pick-up means to receive photographed-image

data.

        The Mitsui, Hsieh, and Rhoads combination does not explicitly disclose a way to

correct the geometrical distorted photographed-image data.

        Motta, in the same field of endeavor of digital imaging ("relates to the field of

image sensors and imaging systems" at column 1, line 8), teaches a geometric

correction processing system for the photographed-image data as depicted in figure 3.

"Data processing may include but is not limited to data interpolation, noise reduction,

color adjustment, and/or geometric corrections due to optical aberrations …" at column

4, line 4.

It would have been obvious at the time the invention was made, that one of ordinary skill in the art would have been motivated to provide the information attaching/detecting system made by Mitsui, Hsieh, and Rhoads combination with the geometrical distortion correction processor as taught by Motta, in order to provide "[a] system that can self test, detect errors, and correct such errors … and would be of great value to many businesses and industries" at Motta column 2, line 29.

Response to Arguments

A) Summary of Applicant's Remark:

The previous claim USC § 101 rejections should be withdrawn in view of the amendment.

Examiner's Response:

Examiner agrees, and the previous claim USC § 101 rejections are withdrawn.

B) Summary of Applicant's Remark:

"However, the regions S 1, S2, and S4 shown in FIG. 33 are not regions which include a photographed object. That is, this portion of Mitsui does not disclose extracting a plurality of regions, each of which includes a photographed object. Rather, FIG. 33 is an illustration showing how the digital watermark is embedded in form Y. However, form Y is not itself an image containing a plurality of photographed objects. Rather, form Y is a mere document format which only includes a single photograph. See col. 37, lines 40-46" at Remarks page 8, line 1.

Examiner's Response:

See Mitsui figure 32 which indicates a plurality of regions, such as character with REGION 1 and REGION2 and photograph with REGION 3 and REGION n, is valid for object extraction. Refer to the rejections above for further discussion.

C) Summary of Applicant's Remark:

"With regard to form Y, Mitsui merely discloses extracting a frame region of a photograph, not extracting a plurality of facial regions of humans. Nowhere does Mitsui disclose or fairly suggest extracting any facial regions. Therefore, Applicants submit Mitsui fails to disclose "object extracting means, for extracting a plurality of facial regions of humans from within the image; and information attaching means for attaching different information to each of the facial regions that do not overlap with other facial regions, and acquiring said information- attached image," as recited in claim 1" at Remarks page 8, line 7.

Examiner's Response:

Applicant's argument is moot in view of the new grounds of rejection advanced herein above. Specifically, the Hsieh et al. (US 7,003,135 B2) reference now teaches the concept of plurality of human facial regions extraction. Refer to the rejections above for further discussion.

D) Examiner's General Remark:

Applicant has not submitted claims drawn to limitations, which define the operation and apparatus of Applicant's disclosed invention in manner, which

distinguishes over the prior art. As it is Applicant's right to claim as broadly as possible their invention, it is also the Examiner's right to interpret the claim language as broadly as possible. It is the Examiner's position that the detailed functionality that allows for Applicant's invention to overcome the prior art used in the rejection, fails to differentiate in detail how these features of applicant's specification are. It is suggested that Applicant compare the original specification and claim language with the cited prior art used in the rejection section above to draw an amended claim set to further the prosecution. Examiner reiterates the need for the Applicant to more clearly and distinctly define the claimed invention.

Conclusion

5.   Applicant's amendment is rejected in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eueng-nan Yeh whose telephone number is 571-270-1586. The examiner can normally be reached on Monday-Friday 8AM-4:30PM EDT.

7.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

        Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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